Claims

[c1]   1. A method of detection of exact relative position of a tool or a sensor with respect to a holding element that involves:
proximity measurement with at least two different inclinations of the holding element with respect to a planar body's surface, and wherein the proximity measurements results reflect relative position of the tool/sensor with respect to said planar surface.

[c2]   2. An algorithm described in this document that allows to compute precise position of a tool/sensor with respect to a holder which uses measurements or results obtained through the method of claim 1.

[c3]   3. A method of claim 1 that utilizes a holder with multiple types of actuators or positioning motors, where in some actuators or motors provide coarse positioning of the holder or the tool with respect to the holder and other are capable of achieving higher precision positioning of the holder or of the tool/sensor with respect to the holder.

[c4]   4. An algorithm described in this document that allows

to compute precise position of a tool/sensor with respect to a holder for at least one predefined position of actuators capable of adjusting position of the tool with respect to the tool holder which uses measurements or results obtained through the method of claim 3.

[c5]   5. A method of claim 1 where in the apparatus contains more than one sensor that responds to proximity, pressure, force, electric field, or any other factors in some extent dependent from relative position of the tool, and these sensors may be arranged in ordered pattern.

[c6]   6. A method of claim 3 where in the apparatus contains more than one sensor that responds to proximity, pressure, force, electric field, or any other factors in some extent dependent from relative position of the tool, and these sensors may be arranged in ordered pattern.

[c7]   7. An algorithm of claim 2 that uses data of multiple measurements and computes positions of different regions of a tool or multiple tools/sensors.

[c8]   8. An algorithm of claim 4 that uses data of multiple measurements and computes positions of different regions of a tool or multiple tools/sensors.

[c9]   9. An algorithm of claims 2 that uses data of multiple sensors and computes positions of different regions of

tool.

[c10] An algorithm of claims 4 that uses data of multiple sensors and computes positions of different regions of tool.